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Orthogonal series. Transl. from the Russian by **Ralph P. Boas**. Transl. ed. by **Ben Silver**. (English) [Zbl 0668.42011](#)

Translations of Mathematical Monographs, 75. Providence, RI: American Mathematical Society (AMS). xii, 451 p. \$ 146.00 (1989).

For a review of the Russian original (1984) see [Zbl 0632.42017](#).

In this book we present the fundamental methods of the theory of orthogonal series. We study general orthonormal systems as well as specific systems (for example, the Haar and Franklin systems). We present both, classical results and those obtained more recently. All propositions that fall outside the scope of university courses are provided with full proofs.

Contents: Introductory concepts and some general results. Independent functions and their first applications. The Haar systems. Some results on the trigonometric and Walsh systems. The Hilbert transform and some function spaces. The Faber-Schauder and Franklin systems. Orthogonalization and factorization theorems. Theorems on the convergence of general orthogonal series. General theorems on the divergence of orthogonal series. Some theorems on the representation of functions by orthogonal series

MSC:

- [42C05](#) Orthogonal functions and polynomials, general theory of nontrigonometric harmonic analysis
- [42-02](#) Research exposition (monographs, survey articles) pertaining to harmonic analysis on Euclidean spaces
- [42A38](#) Fourier and Fourier-Stieltjes transforms and other transforms of Fourier type
- [42A20](#) Convergence and absolute convergence of Fourier and trigonometric series

Cited in **4** Reviews
Cited in **67** Documents

Keywords:

[orthogonal series](#); [Haar system](#); [Fourier series](#); [Franklin systems](#)